Comparison of Treatment for Post-Traumatic Stress Disorder among Three Department of Veterans Affairs Medical Centers

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The objective of the present study was to compare three specialized treatment programs for post-traumatic stress disorder (PTSD) in different Veterans Affairs medical centers, in terms of the format of therapeutic services and the medications prescribed for PTSD. Chart review methods were used to examine medical records for 50 patients from each facility over a 6-month period. Results indicated that the medications prescribed were fairly consistent across sites, although they were not always consistent with treatment recommendations. Therapy formats for two of the facilities were quite different, with one offering more case management services and the other offering more intensive individual and group therapy services. Additional research is needed to broaden our knowledge of how PTSD is being treated currently and to study the effectiveness of the treatment strategies being used.

Introduction

Post-traumatic stress disorder (PTSD) is a common psychiatric disorder with a lifetime risk in the general population of approximately 9%.[1] PTSD is even more common among Veterans Affairs medical center (VAMC) patients. For example, 30% of Vietnam veterans have met criteria at some point,[2] and enormous amounts of resources go to treatment of this disorder. Treatment guidelines have recently been published and reflect the wide variety of treatments that are being used and the lack of consensus regarding best practices.[3,4] Exposure therapy and a number of medications, particularly the selective serotonin-reuptake inhibitors (SSRIs), have been relatively well researched and found to be largely effective in civilian samples. However, no single therapy has been found to be consistently effective for veterans with PTSD.

Major questions remain regarding effective medications for veterans with PTSD. There are only two Food and Drug Administration-approved medications for PTSD, namely, sertraline and paroxetine. SSRIs are considered the first-line agents for the treatment of PTSD.[5] However, the evidence that medications are effective for veterans with PTSD is limited. For example, in a small, double-blind, placebo-controlled study, van der Kolk et al.[6] found fluoxetine to be much more effective among civilians than among veterans. Large, double-blind, placebo-controlled studies using sertraline and paroxetine included too few veterans to draw any conclusions.[7,8] Double-blind, placebo-controlled studies demonstrated the effectiveness of amitriptyline and phenelzine among veterans with PTSD,[9,10] but these medications are rarely used in clinical practice. Most of the remaining studies were open-label trials, which are generally not considered definitive. Open-label studies demonstrated the effectiveness of nefazodone[11] and olanzapine[12] among veterans with PTSD. Sernyak et al.[13] found that, although 10% of their sample of veterans with PTSD were being treated with neuroleptics, this was not associated with improved outcomes. Although it appears that most psychiatric medications have been prescribed for veterans with PTSD, little is known regarding the current state of clinical practice with these patients.

There is similar ambiguity regarding the use of nonpharmacological therapy for veterans with PTSD. The options vary widely and include exposure therapy,[14] insight-oriented therapy,[15] eye movement desensitization and reprocessing,[16] support groups and group psychotherapy,[17,18] inpatient and residential treatment,[19] and individual therapy with a focus on support and development of coping skills.[20] Although exposure therapy is considered a first-line treatment for veterans with PTSD, not everyone may be a candidate for this type of therapy and it is unknown to what extent this therapeutic modality is used in clinical practice. Similar issues arise regarding the modalities of treatment, with some clinicians emphasizing individual therapy, others emphasizing group work, and still others using less-intensive case management strategies.

A first step toward a better understanding of what constitutes effective treatment for veterans with PTSD is to ascertain what is being done in PTSD clinics at this time. In terms of medication use, preliminary studies within the Department of Veterans Affairs (VA) system identified relatively high rates of benzodiazepine prescriptions (36%)[21] and more moderate use of antipsychotic medications (10%).[13] In a mostly female, predominantly community mental health center sample, primary medications prescribed for patients with a PTSD diagnosis were benzodiazepines (54%), SSRI antidepressants (32%), and "novel" antidepressants such as mirtazapine, bupropion, and nefazodone (25%).[22] Studies with veterans have not examined the broad range of possible psychiatric medications beyond benzodiazepines and neuroleptics. None of the previous studies investigated possible differences between treatment centers within large mental health networks (such as the VA system) or differences in the modality of psychotherapeutic services. The current study compared medications used in the treatment of PTSD at three geographically distinct VAMC clinics specializing in the treatment of PTSD. We also compared two of these VAMC clinics to examine the modality of nonpharmacological therapies provided for PTSD.

Methods

Existing computerized records at VAMCs allowed comparison of types of treatments for PTSD across three different medical

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centers. Random samples of 50 records of patients receiving treatment in each of three specialized PTSD programs were examined to assess the types of care provided during a 6-month period and the types of medications prescribed. Human subject approval was obtained from the institutional review board at each facility. The sites were chosen to vary in geographical region (Midwest, Minneapolis VAMC; East, VA Boston Healthcare System; South, Memphis VAMC). The programs at Minneapolis and Boston were similar in size and type of programming provided; therefore, the modes of clinical contact (e.g., individual therapy, group therapy, case management, and medication management) and medications prescribed were collected at both sites. The facility in the southern region was smaller; therefore, only data on medications prescribed were collected, because any variation in types of therapy provided would most likely be attributable to availability rather than treatment philosophy.

The study involved two phases. The first phase consisted of establishing inter-rater reliability in terms of classification of types of clinical contact. Three staff members were trained in the classification system and then asked to classify 100 deidentified progress notes taken from the computerized medical records system. The coding system provided acceptable inter-rater reliability (Cohen's κ ranged from 0.84 to 0.90 for rater pairs). In the second phase, the records of 50 patients at each of the three facilities were randomly selected and examined, for a total of 150 patients. The following information was recorded from each record: number of therapy encounters of different types (e.g., individual, group, or medication management) during the 6-month period from October 2000 to March 2001, medications prescribed during the same period, diagnosis, service connection status, age, and ethnicity.

We included only patients who had been enrolled in treatment clinics for PTSD for at least the 6 months before the review. For a more homogeneous group of patients, only patients who reported Vietnam combat experiences were included in the study. Exclusion criteria were current or lifetime chart diagnosis of bipolar disorder, schizophrenia, delusional disorder, or psychosis.

Results

Participants

The mean age of the patients surveyed was 53 years, and there were no significant differences across sites. The Minneapolis sample consisted of 94% Caucasian, 4% African American, and 2% Hispanic patients. The Boston sample included 85% Caucasian, 15% African American, and 0% Hispanic patients. Memphis reported 70% Caucasian, 30% African American, and 0% Hispanic patients. These differences in ethnic distributions were significant across sites.

Prescribed Medications

The types of medications prescribed were compared across all three sites. Medications were first sorted into psychiatric and nonpsychiatric categories. Psychiatric medications were further categorized as shown in Table I. Then, χ^2 analyses were used to compare the proportions of patients in each medication category across sites. It should be noted that in some cases the expected cell sizes were small, precluding the use of the χ^2 statistic.

Table I demonstrates that the vast majority (83–96% at each site) of all patients were taking medications and the average

TABLE I

PROPORTIONS OF PATIENTS PRESCRIBED EACH CATEGORY OF MEDICATION ACROSS SITES

Medication Category	Medications Included	Proportion Receiving Medications (mean total medications prescribed)		
		Minneapolis	Memphis	Boston
Any medication	All	0.90 (6.38)	0.96 (5.90)	0.83 (6.05)
Nonpsychiatric medication	All except those listed below	0.64 (5.53)	0.90 (3.84)	0.65[a] (5.06)
Psychiatric medication (all)	All medications listed below	0.88 (2.50)	0.96 (2.29)	0.65[a] (2.59)
Antidepressant, SSRI	Citalopram, fluoxetine, sertraline, paroxetine	0.30	0.54	0.35[c]
Antidepressant, tricyclic antidepressant	Amitriptyline, doxepin, nortriptyline	0.08	0.08	0.08[d]
Antidepressant, other	Bupropion, mirtazapine, nefazodone, venlafaxine	0.40	0.34	0.31
Specific antidepressant	Trazodone	0.22	0.36	0.23
Anxiolytic, benzodiazapine	Clonazepam, diazepam, lorazepam, oxazepam, temazepam	0.28	0.28	0.31
Anxiolytic, other	Clonidine, hydroxyzine	0.08	0.20	0.02[b]
Specific anxiolytic	Buspirone	0.08	0.16	0.08
Antipsychotic, typical	Chlorpromazine, thiothixene	0.04	0.00	0.00[d]
Antipsychotic, atypical	Olanzapine, quetiapine fumarate, risperidone	0.08	0.02	0.04[d]
Mood stabilizer	Carbamazepine, divalproex, gabapentin, lamotrigine, lithium carbonate	0.16	0.14	0.22
Hypnotic	Zolpidem	0.34	0.04	0.00[b]
Other psychiatric medication	Methylphenidate, naltrexone	0.02	0.00	0.06[c]

[a] $p < 0.001$.
[b] $p < 0.01$.
[c] $p < 0.05$.
[d] Expected cell frequencies too small for χ^2 analysis.

number of medications was quite high. The proportions of patients taking psychiatric medications also were high across sites (ranging from 65% to 96%). The mean number of medications prescribed to patients who were receiving medications (any medications, psychiatric medications, or nonpsychiatric medications) was approximately six across the three sites and did not differ significantly among sites. The average medicated patient was prescribed between two and three psychiatric medications. The use of SSRIs was between 30% and 54%, and antidepressant medications were the most commonly prescribed class of medications. The use of trazodone, an antidepressant that is often prescribed for its hypnotic properties, did not differ across sites. Use of antipsychotic medications was generally infrequent, whereas mood stabilizers were used more often (~20% of the time) across all sites. Benzodiazepines also were quite common and were prescribed to nearly 30% of all patients across the sites.

Services Received

The number and type of treatment sessions were collected from Minneapolis and Boston for comparison. Medical records were examined and mental health service contacts were placed in one of the following categories: case management, individual therapy, medication management, group therapy, or other. The mean number of contacts provided at each site was compared with independent group t tests (Table II).

The two sites had equivalent average numbers of medication management visits. Minneapolis had a greater number of case management visits per patient. Boston had a greater number of individual therapy, group therapy and other types of visits. When the specific sessions coded as "other" were examined, they were found to be mostly for psychological assessment services.

Discussion

It is interesting to note that, even with the lack of firm guidelines regarding pharmacological treatment of PTSD, there was a great deal of similarity among the three VA sites in terms of the medications being used. This included the total number of medications and the types of psychotropic medications, antidepressants, and benzodiazepines prescribed. Antidepressant medications were common across sites, with tricyclic antidepressants being much less common than SSRIs or other types of antidepressants. It was surprising to find that SSRIs, considered the first line of treatment for PTSD, were not prescribed more frequently than other (non-tricyclic antidepressant) types of antidepressants (such as bupropion, mirtazapine, nefazodone, and venlafaxine). The average number of medications was high (five or more at all three sites), probably reflecting the chronicity and overall level of the pathological conditions of this group of patients. Despite a relative paucity of data regarding the effectiveness of psychiatric medications for this group of patients, VA clinicians clearly behave as though medications are indicated, with most patients taking psychotropic medications rather than being treated with psychotherapy alone. The rates of benzodiazepine use were consistent with previous research with veterans with PTSD[21] but substantially lower than the 54% prescription rate noted for a largely female, civilian sample.[22] The Minneapolis data were also similar to previous reports on rates of neuroleptic use for this population.[13]

In terms of medication differences among the sites, Boston clinicians prescribed psychiatric medications to fewer patients than did clinicians at the other two sites. Memphis clinicians more often prescribed clonidine and hydroxyzine (medications that are often used off label to treat anxiety symptoms) and the SSRI antidepressants. There was a nonsignificant trend for those clinicians to prescribe more buspirone. Use of the hypnotic zolpidem was almost nonexistent except in Minneapolis, where it was commonly prescribed.

Clearly, the Minneapolis and Boston programs differed in the intensity and types of contacts they had with veterans with PTSD. The Minneapolis clinicians saw patients less often overall and relied less on group therapy or individual therapy and more on case management. Although fewer patients at the Boston VAMC were receiving medications, the mean numbers of medication management visits were similar across the sites. The data on the Minneapolis and Boston programs suggest different program philosophies. The Boston program relies more on therapeutic services and less on medication than does the Minneapolis program. In contrast, the Minneapolis program uses more of a case management model, with less-intensive levels of contact. The clinical implications of this difference in treatment modalities have not been investigated empirically in efficacy or effectiveness research, and this represents a promising area for future study.

The present study represents an initial investigation of the types of services offered for treatment of PTSD within an integrated national service network. Results highlight both similarities and differences in treatment approaches across regionally diverse sites. The study is limited in terms of sample size, number of programs examined, and level of specification for nonpharmacological treatments, and it does not specifically rule out cross-site differences in illness severity. Nonetheless, it suggests some areas for further investigation and may encourage more research into the types of services that are being provided and the real-world effectiveness of such services.

TABLE II

MEAN NUMBERS OF SESSIONS PROVIDED ACROSS SITES FOR THE 6-MONTH STUDY PERIOD

Session Type	No. of Sessions	
	Minneapolis	Boston
Case management	1.98	0.14[a]
Individual therapy	0.88	7.14[a]
Medication management	2.66	2.26
Group therapy	1.54	5.34[a]
Other	0.20	1.40[c]
Total contacts	7.26	16.28[d]

$df = 98$ for independent-groups t test.
[a] $p < 0.001$.
[b] $p < 0.05$.
[c] $p < 0.01$.
[d] $p < 0.0001$.

References

1. Davidson JRT: Posttraumatic stress disorder and acute stress disorder. In: Comprehensive Textbook of Psychiatry. Ed 6. pp 1227-36. Edited by Kaplan HI, Sadock BJ. Baltimore, MD, Williams & Wilkins, 1995.
2. Kulka RA, Schlenger WE, Fairbank JA, et al: National Vietnam Readjustment

Study (NVVRS): Description, Current Status, and Initial PTSD Prevalence Estimates. Washington, DC, Veterans Administration, 1988.
3. Foa EB, Davidson JRT, Frances A, Culpepper L, Ruth R, Ross D: The expert consensus guideline series: treatment of posttraumatic stress disorder. J Clin Psychiatry 1999; 60(Suppl 16): 4–76.
4. Foa EB, Keane TM, Friedman MJ: Guidelines for treatment of PTSD. J Trauma Stress 2000; 13: 539–55.
5. Friedman MJ, Donnelly CL, Mellman TA: Pharmacotherapy for PTSD. Psychiatr Ann 2003; 33: 57–62.
6. van der Kolk BA, Dreyfuss D, Michaels M, et al: Fluoxetine in posttraumatic stress disorder. J Clin Psychiatry 1994; 55: 517–22.
7. Brady K, Pearlstein T, Asnis GM, et al: Efficacy and safety of sertraline treatment of posttraumatic stress disorder: a randomized controlled trial. JAMA 2000; 283: 1837–44.
8. Tucker P, Zaninelli R, Yehuda R, Ruggiero L, Dillingham K, Pitts C: Paroxetine in the treatment of chronic posttraumatic stress disorder: results of a placebo-controlled, flexible-dosage trial. J Clin Psychiatry 2001; 62: 860–8.
9. Davidson J, Kudler H, Smith R, et al: Treatment of posttraumatic stress disorder with amitriptyline and placebo. Arch Gen Psychiatry 1990; 47: 259–66.
10. Kosten TR, Frank JB, Dan E, McDougle CJ, Giller EL Jr: Pharmacotherapy for posttraumatic stress disorder using phenelzine or imipramine. J Nerv Ment Dis 1991; 179: 366–70.
11. Hertzberg MA, Feldman ME, Beckham JC, Moore SD, Davidson JR: Three- to four-year follow-up to an open trial of nefazodone for combat-related posttraumatic stress disorder. Ann Clin Psychiatry 2002; 14: 215–21.
12. Petty F, Brannan S, Casada J, et al: Olanzapine treatment for PTSD: an open-label study. Int Clin Psychopharmacol 2001; 16: 331–7.
13. Sernyak MJ, Kosten TR, Fontana A, Rosenheck R: Neuroleptic use in the treatment of PTSD. Psychiatr Q 2001; 72: 197–213.
14. Rothbaum BO, Schwartz AC: Exposure therapy for posttraumatic stress disorder. Am J Psychother 2002; 56: 59–75.
15. Plakun EM, Shapiro ER: Psychodynamic psychotherapy for PTSD. J Clin Psychiatry 2000; 61: 787–8.
16. Smyth NJ, Greenwald R, de Jongh A, Lee C: EMDR for treatment of PTSD. J Clin Psychiatry 2000; 61: 784–5.
17. Allen SN, Bloom SL: Group and family treatment of posttraumatic stress disorder. Psychiatr Clin North Am 1994; 17: 425–37.
18. Tutty LM, Bidgood BA, Rothery MA: Support groups for battered women: research on their efficacy. J Fam Violence 1993; 8: 325–43.
19. Bloom SL: The sanctuary model: developing generic inpatient programs for the treatment of psychological trauma. In: Handbook of Posttraumatic Therapy, pp 474–494. Edited by Williams MB, Sommer JF. Westport, CT, Greenwood Press, 1994.
20. McFarlane AC: Individual psychotherapy for PTSD. Psychiatr Clin North Am 1994; 17: 393–408.
21. Kosten TR, Fontana A, Sernyak MJ, Rosenheck R: Benzodiazepine use in posttraumatic stress disorder among veterans with substance abuse. J Nerv Ment Dis 2000; 188: 454–9.
22. Mellman TA, Clark RE, Peacock WJ: Prescribing patterns for patients with posttraumatic stress disorder. Psychiatr Serv 2003; 54: 1618–21.

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